

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION**

IMRA AMERICA, INC.,

Plaintiff,

v.

Case No. 06-15139

IPG PHOTONICS CORP.,

Honorable Arthur J. Tarnow
Senior United States District Judge

Defendant.

**OPINION AND ORDER GRANTING PLAINTIFF’S MOTION FOR
SUMMARY JUDGMENT OF NO INVALIDITY FOR DERIVATION [149],
DENYING IN PART AND GRANTING IN PART DEFENDANT’S MOTION
FOR SUMMARY JUDGMENT REGARDING DAMAGES ISSUES [155],
GRANTING PLAINTIFF’S MOTION FOR SUMMARY JUDGMENT OF
NO INEQUITABLE CONDUCT [162], and DENYING DEFENDANT’S
MOTION FOR SUMMARY JUDGMENT OF NO INFRINGEMENT,
INVALIDITY, AND NO WILLFUL INFRINGEMENT [198]**

INTRODUCTION

The plaintiff in this patent case is a Michigan corporation (“Plaintiff” or “IMRA”) that is suing a Massachusetts-based corporation with international facilities (“Defendant” or “IPG”) for the alleged infringement of certain enumerated claims of United States Patent No. 5,818,630 (the “‘630 Patent”). The Court issued an Opinion and Order [193] adopting Plaintiff’s proposed

construction of the term “mode converter.”

Before the Court are four summary judgment motions: 1) Plaintiff’s Motion for Summary Judgment of No Invalidity for Derivation [149]; 2) Defendant’s Motion for Summary Judgment Regarding Damages [155]; 3) Plaintiff’s Motion for Summary Judgment of No Inequitable Conduct [162]; and Defendant’s Motion for Summary Judgment of No Infringement, Invalidity, and No Willful Infringement [198]. A hearing on the pending motions was held on March 3, 2011.

For the reasons set forth below, the Court GRANTS Plaintiff’s Motion for Summary Judgment of No Invalidity for Derivation [149]; DENIES IN PART and GRANTS IN PART Defendant’s Motion for Summary Judgment Regarding Damages Issues [155]; GRANTS Plaintiff’s Motion for Summary Judgment of No Inequitable Conduct; and DENIES Defendant’s Motion for Summary Judgment of No Infringement, Invalidity, and No Willful Infringement.¹

STANDARD OF REVIEW

Summary judgment is appropriate on an issue or claim when “drawing all reasonable factual inferences in favor of the non-movant, the evidence is such that the non-movant can not prevail.” *ATD Corp. v. Lydall, Inc.*, 159 F.3d 534, 547 (Fed. Cir. 1998); *see also London v. Carson Pirie Scott & Co.*, 946 F.2d 1534, 1537 (Fed. Cir. 1991). To defeat a motion for summary judgment, there must be enough evidence to enable a reasonable jury to find for the non-moving party on

¹ The parties are familiar with the facts of the case so, except as necessary, the Court does not repeat them here.

that issue. *See Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 249 (1986).

“Summary judgment is as appropriate in a patent case as any other.” *Barmag Barmer Maschinenfabrik AG v. Murata Mach., Ltd.*, 731 F.2d 831, 835 (Fed. Cir. 1984).

DISCUSSION

A. Plaintiff’s Motion for Summary Judgment of No Invalidity for Derivation [149]

Plaintiff brings this Motion [149] arguing that Defendant should be precluded from raising the defense that the ‘630 patent is invalid pursuant to 35 U.S.C. § 102(f) as having been derived from two independent sources. Defendant argues that the work of Drs. Yang and Gapontsev render the ‘630 patent invalid for derivation. For the reasons stated below, the Court finds that IPG’s claims of derivation cannot be proven as a matter of law.

1. Derivation Under 35 U.S.C. § 102(f)

“A patent is presumed to be valid.” *Monon Corp. v. Stoughton Trailers, Inc.*, 239 F.3d 1253, 1257 (Fed. Cir. 2001); *see also* 35 U.S.C. § 282 (2006). The presumption can be overcome at summary judgment if the party alleging invalidity can produce clear and convincing evidence of such invalidity “on an essential element of a defense upon which a reasonable jury could invalidate the patent.” *Eli Lilly & Co. v. Barr Labs., Inc.*, 251 F.3d 955, 962 (Fed. Cir. 2001).

Title 35 U.S.C. § 102(f) provides that “[a] person shall be entitled to a patent unless . . . he did not himself invent the subject matter sought to be patented.” 35 U.S.C. §102(f) (2006). To show derivation, the accused infringer must provide

clear and convincing evidence that “both prior conception of the invention by another and communication of that conception to the patentee.” *Eaton Corp. v. Rockwell Intern. Corp.*, 323 F.3d 1332, 1344 (Fed. Cir. 2003) (quoting *Gambro Lundia AB v. Baxter Healthcare Corp.*, 110 F.3d 1573, 1576 (Fed. Cir. 1997)). It is improper for a district court to include the obviousness analysis into the test for derivation.² *Gambro*, 110 F.3d at 1577.

“Conception is the ‘formation in the mind of the inventor, of a definite and permanent idea of the complete and operative invention, as it is hereafter to be applied in practice.’” *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1376 (Fed. Cir. 1986) (internal citation omitted). An inventor’s testimony regarding prior conception cannot, standing alone, be clear and convincing evidence of derivation; corroborating evidence is required. *Price v. Symsek*, 988 F.2d 1187, 1194 (Fed. Cir. 1993).

Section 102(f) does not pertain only to public information; it applies to private communications as well. *Oddzon Prods., Inc. v. Just Toys, Inc.*, 122 F.3d 1396, 1401-02 (Fed. Cir. 1997). “The communication must be sufficient to enable

²It should be noted that the parties disagree as to the applicable law. Defendant insists that a claim for derivation under § 102(f) can be based on obviousness, relying on the *Oddzon* case. See *Oddzon Prods., Inc. v. Just Toys, Inc.*, 122 F.3d 1396 (Fed. Cir. 1997). The Court disagrees and therefore will not address Defendant’s obviousness arguments.

In *Oddzon*, the court considered a different issue—whether under 35 U.S.C. § 103, a prior work that was already invalidating under 102(f) can be considered “prior art” for determining obviousness—than the one presently before this Court. See *Oddzon*, 122 F.3d at 1401 (finding that § 102(f) is a “prior art” provision for purposes of § 103).

one of ordinary skill in the art to make the patented invention.” *Gambro*, 110 F.3d at 1576. It is not enough to simply show that a communication rendered the claimed invention obvious to warrant invalidating a patent. *Id.* at 1578.

a. Dr. Gapontsev

Defendant argues that the “work” of Dr. Gapontsev is at issue with respect to IPG’s derivation defense. Defendant defines the “work” as the Gapontsev Paper³ and IPG products, such as the EAM-4000D device and the PYL-5000M device. *See* Dkt. [149], Ex. G, at 10. As to the devices, Defendant argues that Dr. Bucksbaum’s Expert Report concludes that “disclosures by Dr. Gapontsev would have enabled one of ordinary skill to make and use the claimed invention, in light of the relevant art.” Def.’s Resp. [181] at 11; *see also* Ex. A, at 75-135, 292-328. Dr. Bucksbaum’s report repeatedly discusses obviousness. There is no indication that the devices included every essential element included in the ‘630 patent. Even if Defendant’s devices qualify as a prior conception, there is insufficient evidence to meet the communication prong. Defendant argues sufficient communication is established by Dr. Fermann’s “role as a committee member for the June 1996 CLEO trade show” Def.’s Resp. [181] at 12. Defendant adds that Dr. Fermann’s active investigation of Dr. Gapontsev’s work supports its argument. *Id.* Defendant does not specify what type of investigation Dr. Fermann conducted or

³Dr. Gapontsev’s paper is entitled “25 kW peak power wide-tunable repetition rate and pulse duration of eye-safe MOPFA laser” in *Conference on Lasers and Electro-Optics*, Vol. 9, 1996 OSA Technical Digest Series (Optical Society of America, Washington D.C. 1996) (“the Gapontsev Paper”). Ex. G, at 10.

what he may or may not have discovered. These bare allegations do not show that Dr. Fermann gained information that would now render the '630 patent invalid under § 102(f). There is no indication that Dr. Fermann was privy to communication of an alleged prior conception. In fact, Dr. Gapontsev testified during deposition that IPG's work was treated as a "trade secret." *See* Ex. J., at 40-41.

Defendant cannot meet its burden to prove derivation as to the Gapontsev Paper either. The Gapontsev Paper was written in part by Dr. Valentin Gapontsev, CEO of IPG. The '630 patent was confirmed by the PTO in light of the Gapontsev Paper. Here, Defendant's argument fails under the prior conception prong. Therefore it is unnecessary to discuss the communication prong.

There is no set of facts under which Defendant can meet the prior conception prong. While Dr. Gapontsev has testified that the '630 patent was derived from his work, corroborating evidence of his claims is lacking. The Gapontsev Paper fails to discuss several elements of the claimed invention, namely the mode converter and amplified output beam that is substantially in the fundamental mode. Dr. Bucksbaum states that the Gapontsev paper "does not explicitly disclose an amplified output beam that is substantially in the fundamental mode under either party's proposed construction" as required by Element E of claim 1. Dkt. [152-5], Ex. K, at 293. He further states that "Gapontsev does not explicitly disclose a mode converter" *Id.* at 292. Without disclosing the essential elements, the Gapontsev paper cannot qualify as a "definite and permanent idea of the complete and operative invention, as it is hereafter to be applied in practice," even when

considering Dr. Gapontsev's testimony. *See Hybritech*, 802 F.2d at 1376. If the Gapontsev Paper does not disclose the essential elements, it cannot serve as the basis for the communication of that idea. *See Gambro*, 110 F.3d at 1578. Furthermore, Plaintiff's arguments are supported by the PTO's confirmation of the '630 patent in view of the Gapontsev Paper.

b. The Yang Thesis

In 1996, Dr. Yang wrote the Yang Thesis⁴ while pursuing her Ph.D. at University of Michigan. Dr. Yang received funding from IMRA for her research and worked under Dr. Fermann, one of the named inventors of the '630 patent. The PTO confirmed the '630 patent in view of the Yang Thesis during the reexamination in 2009. Dkt. [149], Ex. C, at 3. The PTO found that the Yang Thesis "does not disclose that said multi-mode amplifier provides an output thereof an amplified beam substantially in the fundamental mode." Dkt. [149], Ex. O, at 4. Plaintiff argues that Defendant cannot prove that the '630 patent was derived from Dr. Yang. Pl.'s Br. [149] at 16. The Court agrees.

Dr. Yang testified that her own thesis work did not generate an amplified beam substantially in the fundamental mode. Ex. L, at 110; *see also id.* at 188-91. Conception must include every element of the claimed invention. *See Coleman v.*

⁴Dr. Yang's doctoral thesis is entitled "Generation and Amplification of Ultrashort Pulses in Erbium, Neodymium, and Thulium Fibers" ("the Yang Thesis"). Ex. G, at 10.

Dines, 754 F.2d 353, 359 (Fed. Cir. 1985). Here, the Yang Thesis does not disclose every feature of the claimed invention. The invention itself failed to produce the desired outcome. Defendant relies on an obviousness analysis, which is misplaced here. Furthermore, the PTO's findings during the reexamination further support Plaintiff's argument. Defendant, as a matter of law, cannot show that the '630 patent was derived from the Yang Thesis. Therefore, the Court finds it unnecessary to consider the communication prong of the derivation test. Plaintiff's Motion for Summary Judgment of No Invalidity for Derivation [149] is granted.

B. Defendant's Motion for Summary Judgment Regarding Damages Issues [155]

Defendant IPG brings this Motion [155] seeking summary judgment that: 1) Plaintiff's claim for pre-suit damages is barred by laches; and 2) Plaintiff failed to comply with the marking statute and therefore is not entitled to damages for the sales of accused products that occurred before Plaintiff notified Defendant of the alleged infringement.

1. Laches

The equitable defense of laches may be used in a patent infringement case. *A.C. Auckerman Co. v. R.L. Chaides Constr. Co.*, 960 F.2d 1020, 1028 (Fed. Cir.

1992) (*en banc*). Defendant must prove 1) that “the plaintiff delayed filing suit for an unreasonable and inexcusable length of time from the time the plaintiff knew or reasonably should have known of its claim against the defendant” and 2) that “the delay operated to the prejudice or injury of the defendant.” *Id.* at 1032. “A presumption of laches arises where a patentee delays bringing a suit for more than six years after the date the patentee knew or should have known” of infringement. *Id.* at 1028. A patentee can overcome the presumption by “introduc[ing] . . . evidence sufficient to raise a genuine dispute as to *either* delay or prejudice.” *Hemstreet v. Computer Entry Sys. Corp.*, 972 F.2d 1290, 1293 (Fed. Cir. 1992) (emphasis in original).

Defendant argues that Plaintiff should have known of the alleged infringement as early as August 23, 2000—the date when Dr. Harter, IMRA’s Vice President, sent a memo to IMRA’s President explaining that there might be a “problem” with the ‘630 patent. Def.’s Br. [155] at 12; *see also* Ex. 21. Defendant also argues that Plaintiff should have known about the alleged infringement when it had discussions with GSI Lumonics (“GSI”) employees about the same. *See* Ex. 23.

Plaintiff responds that since it was 1) assured that Defendant was not infringing the patent in 2000, 2) Defendant marketed its products as “single-

mode,” and 3) that Defendant had an extreme and notorious secrecy policy, that it has raised a genuine issue of material fact as to the reason for delay in filing suit. Plaintiff and Defendant were competing for GSI’s business in 2000. *See* Ex. 1, ¶ 8. GSI’s employee, Shepard Johnson, testified that he had conversations with Defendant and that Defendant was not infringing the ‘630 patent. Ex. 4, at 1. Johnson also testified that he believed Defendant was using single-mode fibers. Ex. 3, 64, 76-77. Plaintiff claims that GSI relayed that information to it. Ex. 1, ¶ 8.

Defendant’s Company Profile states that its employees operate on a “need-to-know basis” to maintain limited access. Ex. 5, at IMRA018986. Defendant also “pots” its products’ key components. Ex. 6, ¶ 4. The “pots” are called “fiber blocks.” They are filled with an opaque silicone encapsulant, which prevents others from analyzing the key components of the products. *Id.*

The Court need not decide whether Plaintiff knew or should have known of the infringement for more than six years prior to the filing of the suit. Even if the presumption of unreasonable delay were raised, Plaintiffs have presented sufficient evidence to raise a genuine issue of material fact as to unreasonable delay. Plaintiff’s reasons for not bringing the suit are supported by the evidence. Plaintiff was assured that the product was non-infringing by GSI. Plaintiff was under the

impression that Defendant's products were single-mode, not multi-mode.

Defendant's policy of secrecy is also supported. If Defendant's own employees did not know the key components of the products, then a competitor arguably could not be expected to discover the alleged infringement. Because there is a genuine issue of material fact as to whether the delay was unreasonable, it is unnecessary to discuss prejudice. Defendant's Motion [155] as to laches is denied.

2. Marking

Plaintiff seeks damages for Defendant's sales of allegedly infringing products from November 16, 2000. The lawsuit was filed six years later on November 16, 2006. Defendant argues that Plaintiff should be precluded from seeking damages prior to the filing of the suit. Defendant's arguments are categorized into three time periods: 1) November 16, 2000 to May 14, 2004; 2) May 14, 2004 to August 4, 2006; and 3) August 4, 2006 to November 16, 2006. For the reasons stated below, Defendant's Motion [155] is granted as to marking.

Marking Under 35 U.S.C. § 287

Anyone who makes, offers to sell, or sells any article covered by a patent may mark the article with the number of the patent. *See* 35 U.S.C. § 287(a) (2006). Failure to mark prevents the patentee from seeking damages for accused infringing

activity unless the patentee provides the accused infringer with actual notice of the alleged infringement. *Id.*

Actual notice “requires the affirmative communication of a specific charge of infringement by a specific accused product or device.” *Amsted Indus. Inc. v. Buckeye Steel Castings Co.*, 24 F.3d 178, 187 (Fed. Cir. 1994). Constructive notice is achieved when the patentee “‘consistently marked substantially all’ of the patented products, and was no longer distributing unmarked products.” *Id.* (quoting *Am. Med. Sys., Inc. v. Med. Eng’g Corp.*, 6 F.3d 1523, 1538 (Fed. Cir. 1993)). In order for the party to avail itself of the constructive notice provision of § 287, once the patentee has begun marking, the marking must be “substantially consistent and continuous” and the party must no longer distribute unmarked products. *Am. Med. Sys.*, 6 F.3d at 1538. The patentee must prove by a preponderance of the evidence that he complied with § 287. *Nike, Inc. v. Wal-Mart Stores, Inc.*, 138 F.3d 1437, 1446 (Fed. Cir. 1998).

November 16, 2000 - May 14, 2004

Plaintiff made, offered for sale, and/or sold devices covered by the ‘630 patent as early as 2000. Ex. 1 at 195-96; Ex. 2. Plaintiff’s expert stated that several products embodying the patent were sold to GSI in 2000. Ex. 5, at 10, ¶

26; *see also* Ex. 6, at 3. IMRA has stated that “[r]elevant products have been marked with labels bearing the ‘630 patent number since at least as early as May 14, 2004.” Ex. 7. Plaintiff provides no evidence that any of its products were marked prior to May 14, 2004. Plaintiff cannot establish that Defendant was under constructive notice between November 16 and May 14, 2004 because it cannot show that it “‘consistently marked substantially all’ of the patented products, and was no longer distributing unmarked products.” *See Amsted*, 24 F.3d at 187 (internal citation omitted).

In early 2000, competition between Plaintiff and Defendant for GSI’s business raised a suspicion of infringement. Plaintiff does not allege that it had conversations with Defendant about the potential infringement. GSI, however, did.

Actual notice “requires the affirmative communication of a specific charge of infringement by a specific accused product or device.” *Amsted*, 24 F.3d at 187. Notice must come from the patentee. *Id.* (internal citations and quotations omitted). Plaintiff has not met its burden of showing that there was an affirmative communication of a specific charge of infringement by a specific product to Defendant. The discussion between Defendant and the third party does not satisfy the actual notice requirement as the notice to Defendant did not come from the

patentee. There is no genuine issue of material fact as to actual or constructive notice to Defendant of the alleged infringement as to marking between November 16, 2000 and May 14, 2004.

May 14 2004 - August 4, 2006

Between May 14, 2004 and August 4, 2006, Plaintiff sold two families of devices covered by the '630 patent—the Femtolite line and the FCPA μ Jewel line. Ex. 1, at 195-96; Ex. 2. Defendant argues that Plaintiff failed to mark its Femtolite F-100 product and that Plaintiff should not be able to bring its claim for pre-suit damages during this time period. *Id.* at 6-8. To support its argument, Defendant provides examples of patent labels from September, 14, 2005 and December 2007 that do not bear the '630 mark. Ex. 9, at IMRA0339688; Ex. 11, at IMRA0547689.

Plaintiff does not argue that actual notice was provided to Defendant during this time period. Instead, Plaintiff argues that constructive notice was provided. As a matter of law, Plaintiff cannot prove constructive notice. Plaintiff would have to prove that it “consistently marked substantially all of its patented products, and was no longer distributing unmarked products.” *See Nike*, 138 F.3d at 1446. The failure to mark the Femtolite F-100 product prevents Plaintiff from seeking pre-suit damages from May 14, 2004 to August 4, 2006.

August 4, 2006 - November 16, 2006

On August 4, 2006 Plaintiff sent Defendant a letter identifying the '630 patent and four of Defendant's products: YLR-1000-SM; YLR-1500-SM; YLP-0.5/80/20; and YLP-1/100/20. Ex. 20. Defendant argues that even if the letter constituted actual notice, Defendant would only be on notice for the four products listed in the letter. Defendant contends that Plaintiff is not entitled to any pre-suit damages for products other than the four listed above between the date of the letter and the filing of the law suit, November 16, 2006.

Plaintiff argues that the letter did affirmatively communicate a specific charge of infringement of the '630 patent by specific products, and that this communication is enough to satisfy § 287. *See Amsted*, 24 F.3d at 187. Plaintiff argues that once Defendant has received actual notice, it cannot claim ignorance of other infringing devices that use the same technology.

Constructive notice was not provided during this time period. Plaintiff's failure to no longer issue unmarked products at least until 2007 prevents it from seeking pre-suit damages under the theory that Defendant was on constructive notice. Plaintiff also failed to provide actual notice of the alleged infringement of IPG products, other than the four named in its August 4, 2006 letter. While the letter does name the '630 patent and four of Defendant's products for which a

license may be appropriate, the letter does not make an affirmative charge of infringement as required by *Amsted*. *Amsted*, 24 F.3d at 187. The letter could have simply been an invitation to enter a licensing agreement as to other products. It does not specifically charge infringement. Plaintiff, as a matter of law, has not shown that it met the stringent requirements of § 287 for IPG products other than the four named in the letter. Therefore, Defendant's Motion [155] is granted

C. Plaintiff's Motion for Summary Judgment of No Inequitable Conduct [162]

Plaintiff brings this Motion for Summary Judgment [162] asking the Court to preclude Defendant of arguing that the '630 patent is unenforceable due to inequitable conduct. Plaintiff argues that Defendant has not met its burden of showing that any of the omissions were material or intended to deceive.

Inequitable Conduct

An individual associated with the filing and prosecution of a patent application "has a duty of candor and good faith in dealing with the [PTO]." 37 C.F.R. § 1.56(a). An inequitable conduct charge arises from an allegation that an individual breached that duty. *See id.* To prevail, a defendant must show that the patentee 1) failed to disclose material information and 2) that it was the patentee's intent to deceive. *M. Eagles Tool Warehouse, Inc. v. Fisher Tooling Co., Inc.*, 439 F.3d 1335, 1339 (Fed. Cir. 2006).

Information is material to patentability when it is not cumulative and: 1) it establishes a prima facie case of unpatentability of a claim; or 2) it refutes, or is inconsistent with, a position the applicant takes in: i) opposing an argument of unpatentability, or ii) asserting an argument of patentability. 37 C.F.R. § 1.56(b). “Materiality may be established . . . by showing that a reasonable examiner would consider the withheld prior art important in deciding whether to issue the patent.” *Merck & Co., Inc. v. Danbury Pharmacal, Inc.*, 873 F.2d 1418, 1421 (Fed. Cir. 1989). Omitted information is generally considered less material than an affirmative misrepresentation. *Purdue Pharma LP v. Endo Pharm. Inc.*, 438 F.3d 1123, 1133 (Fed. Cir. 2006). A misrepresentation need only be within a reasonable examiner’s “realm of consideration.” *Merck & Co.*, 873 F.2d at 1421.

The intent requirement will be proven if the defendant can prove that the withholding at issue was motivated by a specific intent to deceive the PTO. *See M. Eagles*, 439 F.3d at 1340. Even gross negligence in the non-disclosure of material information does not meet the standard to prove deceptive intent. *Kingsdown Med. Consultants, Ltd. v. Hollister Inc.*, 863 F.2d 867, 876 (Fed. Cir. 1988). “Intent need not, and rarely can, be proven by direct evidence. Both elements—materiality and intent—must be proven by clear and convincing evidence. *M. Eagles*, 439 F.3d at 1340. As Plaintiff argues, it is important to note that the Federal Circuit has

“urge[d] caution” to district courts “in making an inequitable conduct determination at the summary judgment stage.” *Id.* (citing *Paragon Podiatry Lab.*, 984 F.3d at 1190).⁵

Defendant’s allegations of inequitable conduct are based on three categories of alleged conduct: 1) withholding references from the PTO during prosecution of the ‘630 patent; 2) misrepresenting prior art and data in the ‘630 patent specification; and 3) misrepresenting a reference during the reexamination of the ‘630 patent. They will be discussed below. The references at issue are 1) the

⁵Plaintiff adds that the Federal Circuit has expressed that it views the charge of inequitable conduct in every major patent case as “an absolute plague.” *Burlington Indus., Inc. v. Dayco Corp.*, 849 F.2d 1418, 1422 (Fed. Cir. 1988). In April 2010, the Federal Circuit has agreed to undertake the *en banc* review of the standard for inequitable conduct. *Therasense, Inc. v. Becton, Dickinson & Co.*, 374 F. App’x 35 (Fed. Cir. 2010). The Court has hinted that a finding of materiality will be amended to require a showing that one or more claims would not have issued and that the Court should refrain from deciding inequitable conduct until the *en banc* review is conducted. *See Avid Identification Sys., Inc. v. Crystal Import Corp.*, 614 F.3d 1330, 1331-32 (Fed. Cir. 2010) (Nelson, J., dissenting from a denial of a stay in a case involving inequitable conduct). The Courts finds Plaintiff’s notation of this issue to be relevant.

Desthieux Paper⁶; 2) the Yang Thesis; 3) the Minelly Abstract⁷; 4) the Keck Paper⁸; 5) the Gapontsev Paper; 6) the alleged misrepresentation of the Griebner Paper⁹, the Gambling Paper¹⁰, and the Poole Paper¹¹; and 7) misrepresentation of the contents of Table 1 of the '630 patent¹².

a.) The Yang Thesis

Dr. Fermann used to be Dr. Yang's mentor when she was a student and a

⁶B. Desthieux et al., "111kw (.5 mJ) Pulse Amplification at 1.5 μ m Using a Gated Cascade of Three Erbium-Doped Fiber Amplifiers", Journal of Applied Physics Letters, Vol. 63, Issue No. 5, p. 586 in 1993 ("the Desthieux Paper"). Ex. L, at 10-11; Ex. M at 43-44.

⁷J.D. Minelly et al., "Cladding-Pumped Fiber Laser/Amplifier System Generating 100 μ J Engery Picosecond Pulses", Conference on Lasers and Electro-Optics, Vol. 11 of 1997 OSA Technical Digest Series (Optical Society of America, Washington D.C., 1997), pg. 475 ("the Minelly Abstract"). Ex. L, at 12013; Ex. M, at 44-45.

⁸Donald B. Keck, "Spatial and Temporal Power Transfer Measurement on a Low-Loss Optical Waveguide," Applied Optics, Vol. 13, No. 8, p. 1882 (1974) ("the Keck Paper"). Ex. Q, at 14-15; Ex. S, at 72.

⁹U. Griebner et al., "Efficient Laser Operation with Nearly Diffraction-Limited Output from a Diode-Pumped Heavily Nd-Dosed Multimode Fiber", Optics Letters, vol. 21, No. 4, 266-68, Feb. 15, 1996 ("the Griebner Paper").

¹⁰W. Gambling et al., "Pulse Dispersion for Single-Mode Operation of Multimode Cladded Optical Fibers", Lett., Elect. Lett., vol. 10, 147-49, May 2, 1974 ("the Gambling Paper").

¹¹Poole, et al., "Fabrication of Low-Loss Optical Fibers Containing Rare-Earth Ions, Optics Letters, vol. 22, 737-38 (1985) ("the Poole Paper").

¹²Ex. Q, at 19; Ex. S, at 71.

consultant for Plaintiff corporation IMRA. Ex. 1, at 188-89, 214-15. Dr. Yang thanked Drs. Fermann and Harter in the “acknowledgments” section of her Thesis. Ex. 4, at iii. Dr. Fermann also admitted to sitting in on Dr. Yang’s defense of her thesis, but maintains that he was not sure if he read her thesis before sitting in on it. Ex. 1, 215-16.

The Yang Thesis was considered during the reexamination of the ‘630 patent. Ex. C at 3-5. The PTO confirmed the patent claims over the Yang Thesis. *Id.* Plaintiff cited the Yang Paper¹³ in the Background Section of the ‘630 patent. Ex. O col. 1, ll. 65-col. 2, l. 7. The PTO, during reexamination, found that the Yang Thesis did not disclose the mode converter. Ex. F, at 3; Ex. D, at 16-20.

Plaintiff asserts that the work described in the Yang Thesis is also the work that is discussed in the Yang Paper. Plaintiff believed the Yang Paper was cumulative to the Yang Thesis. Defendant argues that the Yang Paper should have been disclosed to the PTO. Defendant further argues that the close relationship between Dr. Fermann and Dr. Yang is evidence of Plaintiff’s intent to deceive.

The Court need not address the materiality of the Yang Thesis because there is no genuine issue of material fact as to Plaintiff’s intent to deceive by not

¹³Lih-Mei Yang et al., “Chirped-pulse amplification of ultrashort pulses with a multimode Tm:ZBLAN fiber upconversion amplifier”, *Optics Letters* 20(9): 1044-46 (1995) (“the Yang Paper”). Ex. O, col. 1, ll. 65-col. 2, l. 7.

disclosing the Yang Thesis. The relationship between Dr. Fermann and Dr. Yang does not evidence an intent to deceive. Dr. Fermann's testimony that the Yang Thesis was cumulative of the Yang Paper is consistent with the PTO's findings.

Defendant seems to suggest that the prosecuting attorney was duped by Plaintiff because he says he would have presented the Yang Thesis if he knew about it. Ex. 2, 50-51. However, during that prosecuting attorney's testimony, he goes on to say that he would only do so because it is his practice to present everything, not because he thought it was material or would have resulted in a different outcome. *See id.* There is no genuine issue of material fact as to an alleged intent to deceive by Plaintiff. The Court grants Plaintiff's Motion as to the Yang Thesis.

b.) The Desthieux Paper

Defendant alleges that Plaintiff was engaged in inequitable conduct by failing to disclose the Desthieux Paper. Drs. Fermann and Harter read the Desthieux Paper. They cited to it in another article they wrote about the amplification in multi-mode fibers. Ex. 9, Fermann Review Article, at 259.

Plaintiff argues that the reason the Desthieux Paper was not cited during the prosecution of the '630 patent was because Dr. Fermann believed that it was "further away from the state of the art" than the references he did cite. Ex. N, at

195-96. Defendant responds by arguing that the Desthieux Paper is highly relevant, exposing the mode converter, and that the fact that the '630 inventors had cited it in another paper but not in the patent prosecution is evidence of intent to deceive. Def.'s Resp. [186] at 13-15. Defendant's expert, Dr. Bucksbaum, concludes that the telescope disclosed in the Desthieux Paper anticipates a limitation of the '630 patent. *Id.* at 14 (citing Ex. 11, Bucksbaum Report dated February 10, 2010, at 44-46). Defendant argues that the Desthieux Paper teaches a key feature of the '630 patent and that this failure to disclose "justifies a strong inference that the withholding was intentional." *Molins PLC v. Textron, Inc.*, 48 F.3d 1172, 1182 (Fed. Cir. 1995).

Plaintiff argues that the *Molins* case on which Defendant relies is inapplicable here. In *Molins*, the Court found evidence of deceptive intent where a reference that was withheld had been used in a patent prosecution in a foreign country. *Molins*, 48 F.3d at 1181. In that case, the patentee had stated that the reference was the closest prior art in the foreign country but had failed to use it in the United States. Here, that did not happen. Here, Plaintiff argues that it genuinely did not find the Desthieux Paper to be material. It argues that its citation to the Desthieux Paper in an unrelated article is not inconsistent with its position. The Court agrees. The Court need not address materiality because there is no

genuine issue of material fact as to the intent to deceive.

c.) Remaining References and Alleged Misrepresentations

With respect to the rest of the references and alleged misrepresentations at issue, Plaintiff argues that they were not presented because Dr. Fermann felt that they were cumulative and immaterial. Pl.'s Br. [162] at 14-16. Plaintiff adds that Defendant's have not shown any intent to deceive. *Id.* at 16-19.

Defendant responds that since the Plaintiff had cited to these articles in its academic work proves the materiality of the information. Def.'s Resp. [186] at 16-17. Defendants adds that the failure to then reference this material in the patent prosecution further supports the inference of some intent to deceive. *Id.* at 17. Plaintiff replies that there is no evidence that the inventors believed the reference was material to the invention. Pl.'s Reply [191] at 5. Dr. Fermann testified that the documents did not discuss to any output structure of the multi-mode fiber amplifier and that the references were cumulative. *Id.* at 5 (citing Ex. N, 191-93).

Defendant's assertions are bare and inadequate. Mere knowledge does not prove culpable intent. *Allen Organ Co. v. Kimball Intern., Inc.*, 839 F.2d 1556, 1568 (Fed. Cir. 1988). Plaintiff's motion is granted.

D. Defendant's Motion for Summary Judgment of No Infringement, Invalidity, and No Willful Infringement [198]

Plaintiff brings this Motion [198] arguing 1) that there is no infringement, 2)

the Court's construction of the disputed "mode converter" makes all the claims of the '630 patent impermissibly functional and therefore invalid for definiteness; and 3) Plaintiff has no basis for alleging willful infringement by Defendant.

The '630 Patent

The '630 patent is designed for an amplifier to amplify a laser light. A "multi-mode" ("MM") fiber is used instead of a "single-mode" ("SM") fiber. A non-amplifying fiber is called a "passive fiber. In a SM passive fiber, the fundamental mode of the laser beam has a certain size, called a "mode field diameter" ("MFD").

Defendant argues that the '630 patent is for a situation where the MFD of the MM fiber used for amplification is different than the MFD of the SM passive fiber carrying the laser beam. To match the MFDs, the '630 patent's mode converter is between the two fibers that 1) receives the laser beam from the SM passive fiber, 2) converts the mode of the laser beam to match the fundamental mode of the MM fiber amplifier, and 3) provides/launches the converted beam into the MM fiber amplifier.

Infringement

To prove infringement, the patentee must show that the accused product/device meets each claim limitation either literally or under the doctrine of

equivalents. *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 812 (Fed. Cir. 2002). To prove literal infringement the patentee must prove the accused device or method contains each element of the asserted claim. *See Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 29 (1997). Under the doctrine of equivalents the patentee must prove that the accused device contains an equivalent for each limitation not literally satisfied. *Catalina Mktg.*, 289 F.3d at 812 (internal citations omitted). A determination of infringement, whether literal or under the doctrine of equivalents, is a question of fact. *Id.* (citing *Bai v. L & L Wings, Inc.*, 160 F.3d 1350, 1353 (Fed. Cir. 1998)). “Summary judgment of no literal infringement is proper when, construing the facts in a manner most favorable to the nonmovant, no reasonable jury could find that the accused system meets every limitation recited in the properly construed claims.” *Id.*

The Court finds that there is a genuine issue of material fact as to literal infringement, therefore it is unnecessary to discuss the doctrine of equivalents. This Court held in the Claim Construction that a “mode converter” is an “element” and is synonymous with a “discrete component.” Dkt. [193] at 14.

Defendant custom designs and manufactures its own fibers. Defendant claims that its fibers already “match” and that no converter is needed. Defendant

claims that it simply uses an off-the-shelf splicing machine, with no intervening mode converter. Defendant concludes that the only reasonable use of the '630 patent is for companies that use fibers having different MFDs, not for companies that design their own matching MFDs. Defendant claims that since its fibers are "pre-matched," the accused products do not meet the "match" or "converting to match" requirements of the '630 patent.

Plaintiff's position is that the "splice" is an "element" and that Defendant uses a splice. Plaintiff argues that the "standard" splicer that Defendant claims to use is actually more. Plaintiff argues that Defendant's documents show that there are special splicing programs that Defendant uses to determine the splice time and temperature and that the programs create an optimized splice that acts as a mode converter. Defendant depicts the optimized splice as a separate and distinct element in the design schematics of its products. Ex. A-5 ¶¶ 118(b)-(f). Plaintiff concludes that "[i]f a splice can be formed, tested, and removed if it fails to meet IPG's specifications, and shows up clearly on schematic depictions of the accused products, there is at least a fact issue" for the jury to decide if it uses an "element" within the meaning of "mode converter." Pl.'s Resp. [200] at 13.

Here, Defendant has not met its burden to show that summary judgment is proper. There are many factors in dispute and Plaintiff has provided enough

evidence to show that there is a genuine issue of material fact for the jury to decide. Defendant's own documents show that there is extensive importance in the splicing function. Plaintiff has provided specific citations to the Defendants own design schemes to show the emphasis that Defendant puts on the splicing process. Defendant claims that it is an "arrangement" and not an "element." The issue of whether the optimized splicing and arrangement is an element is one proper for the jury to determine. Both parties' arguments are supported by expert reports that are conflicting. Where there is conflicting expert testimony about how a device functions, summary judgment is inappropriate. *See Crown Packaging Tech., Inc. v. Rexam Beverage Can Co.*, 559 F.3d 1308, 1315 (Fed. Cir. 2009). Therefore, Defendant's Motion is denied as to infringement.

Indefiniteness

Purely functional claim terms are impermissible unless covered under 35 U.S.C. § 112, ¶ 6. Functional claims are rejected that "do not describe the invention but use 'conveniently functional language at the exact point of novelty.'" *Haliburton Oil Well Cementing Co. v. Walker*, 329 U.S. 1, 8 (1946), *superceded in part by statute*; *see also* 35 U.S.C. § 112, ¶ 6. Claims that are purely functional but do not seek shelter under the provisions of § 112, ¶ 6, are invalid for indefiniteness if they do not provide sufficient notice to the public of what is

within the scope of the patentee's right to exclude. *See United Carbon Co. v. Binney & Smith Co.*, 317 U.S. 228, 233 (1942). The leading resource used by patent examiners, the Manual of Patent Examining Procedure, states that “[a] functional limitation must be evaluated and considered just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used.” MPEP ¶ 2173.05(g).

As Plaintiff argues, Defendant has provided no analysis about whether a person skilled in the art would understand what a “mode converter” is in the context. Plaintiff, on the other hand, gives examples of many cases in which functional claims were upheld. *See In re Barr*, 444 F.2d 588, 594-95 (C.C.P.A. 1971) (finding that an element of a chemical compound claimed as “incapable of forming a dye with said oxidizing developing agent” was definite and proper); *see also Application of Venezia*, 530 F.2d 956, 957 (C.C.P.A. 1976) (finding that a mechanical apparatus claim that “members adapted to be positioned” and “portions . . . being resiliently dilatable whereby said housing may be slideably positioned” were definite and communicated the scope of the claim to one skilled in the art). Since Defendant has failed to meet its burden, Defendant's Motion [198] as to indefiniteness is denied.

Willful Infringement

To prove willful infringement, Plaintiff must at least show “objective recklessness.” *In re Seagate Tech., LLC*, 497 F.3d 1360 (Fed. Cir. 2007) (*en banc*). A patentee must show by clear and convincing evidence that the infringer acted despite and objectively high likelihood that its actions constituted infringement of a valid patent. *Id.* at 1371. “The state of mind of the accused infringer is *not* relevant to this objective inquiry.” *Id.* (emphasis added).

Defendant argues that since it has legitimate defenses to present on infringement, the claim for willful infringement is unwarranted. Defendant concludes that it did not act in an “objectively reckless” manner. Def.’s Br. [198] at 19-20. Plaintiff responds that Dr. Gapontsev’s testimony that he used the ‘630 patent and that the PTO has issued many wrong patents in his field are evidence of his disregard for the patent system in this country. Pl.’s Resp. [200] at 19. This particular argument is irrelevant because it goes to the accused infringer’s state of mind.

Plaintiff argues that its internal memo written by Dr. Harter is proof of willful infringement. Dkt. [186], Ex. 7. The memo references a conversation that took place on August 23, 2000 where Dr. Gapontsev stated that Plaintiff “stole his idea.” *Id.* Plaintiff also cites an interrogatory where Defendant admits that in 2006

Dr. Gapontsev was notified by a GSI employee that there was a question as to infringement of the '630 patent. Ex. Z at 2. While these two statements could suggest willful infringement, they also support the Defendant's argument that he really thought he was not infringing. Plaintiff has shown that there is a genuine issue of material fact as to this issue. Defendant's Motion as to willful infringement is denied as well.

CONCLUSION

For the reasons discussed above, and the Court being fully advised in the premises,

IT IS ORDERED that Plaintiff's Motion for Summary Judgment of No Invalidity for Derivation [149] is GRANTED.

IT IS FURTHER ORDERED that Defendant's Motion for Summary Judgment Regarding Damages Issues [155] is DENIED as to the laches argument and GRANTED as to marking.

IT IS FURTHER ORDERED that Plaintiff's Motion for Summary Judgment of No Inequitable Conduct [162] is GRANTED.

IT IS FURTHER ORDERED that Defendant's Motion for Summary Judgment of No Infringement, Invalidity, and No Willful Infringement [198] is DENIED.

SO ORDERED.

S/ARTHUR J. TARNOW

Arthur J. Tarnow
Senior United States District Judge

Dated: March 14, 2011

I hereby certify that a copy of the foregoing document was served upon counsel of record on March 14, 2011, by electronic and/or ordinary mail.

S/LISA M. WARE

Case Manager